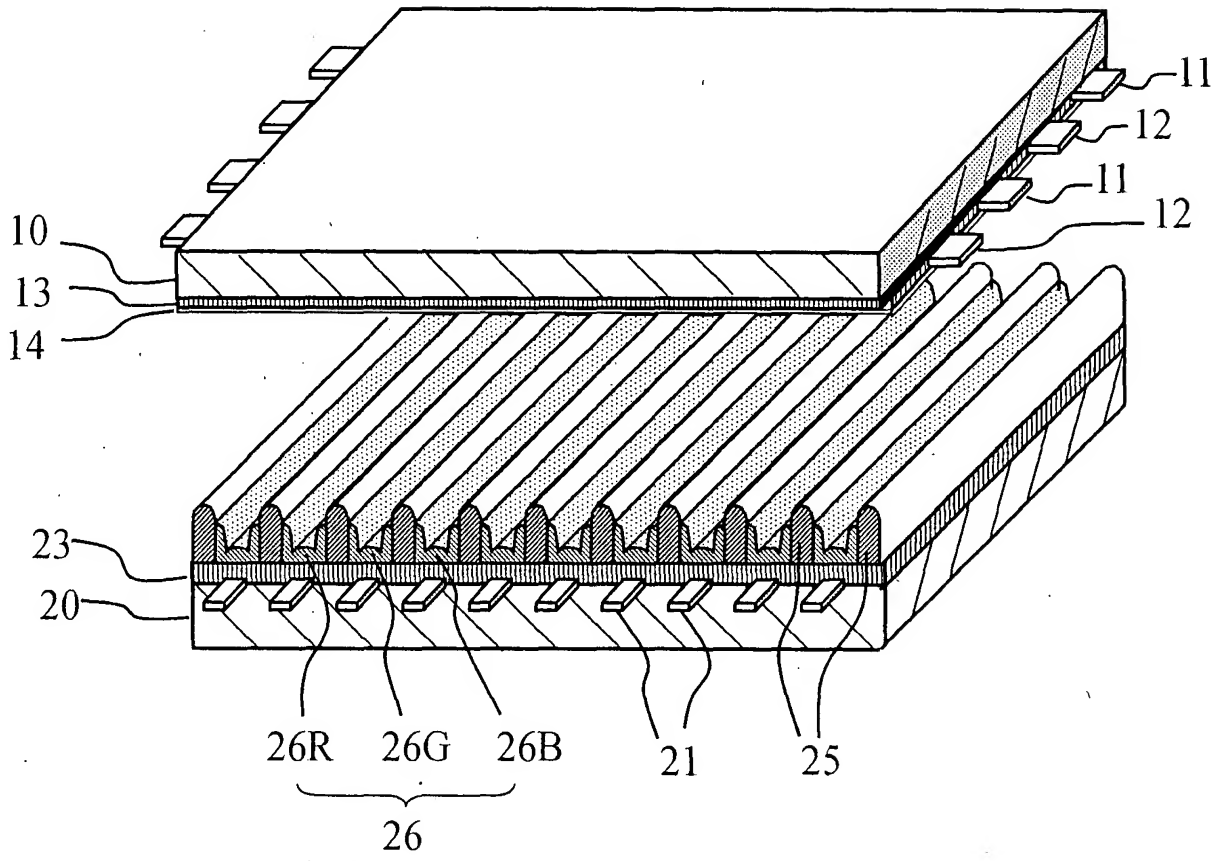


FIG.1

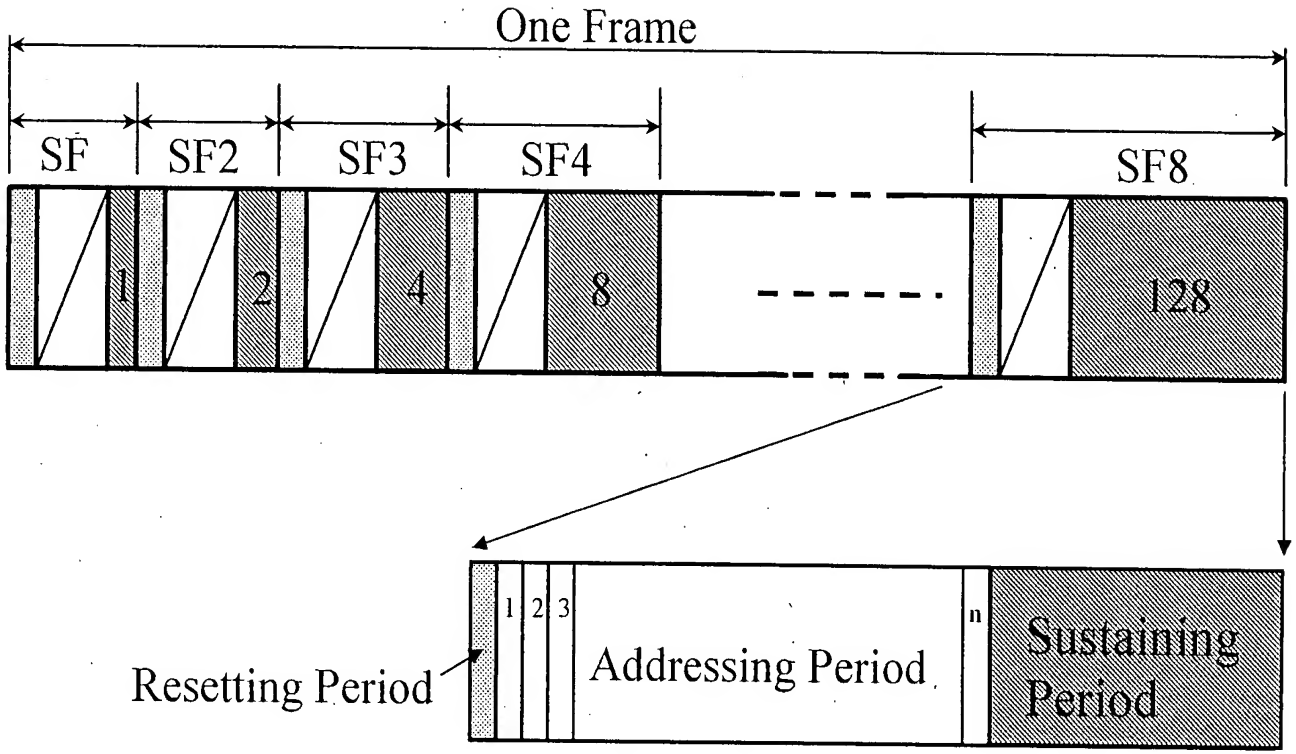

One Frame
SF
SF2
SF3
SF4
SF8
1
2
4
8
128
Resetting Period
1
2
3
n
Addressing Period
Sustaining Period

FIG.2

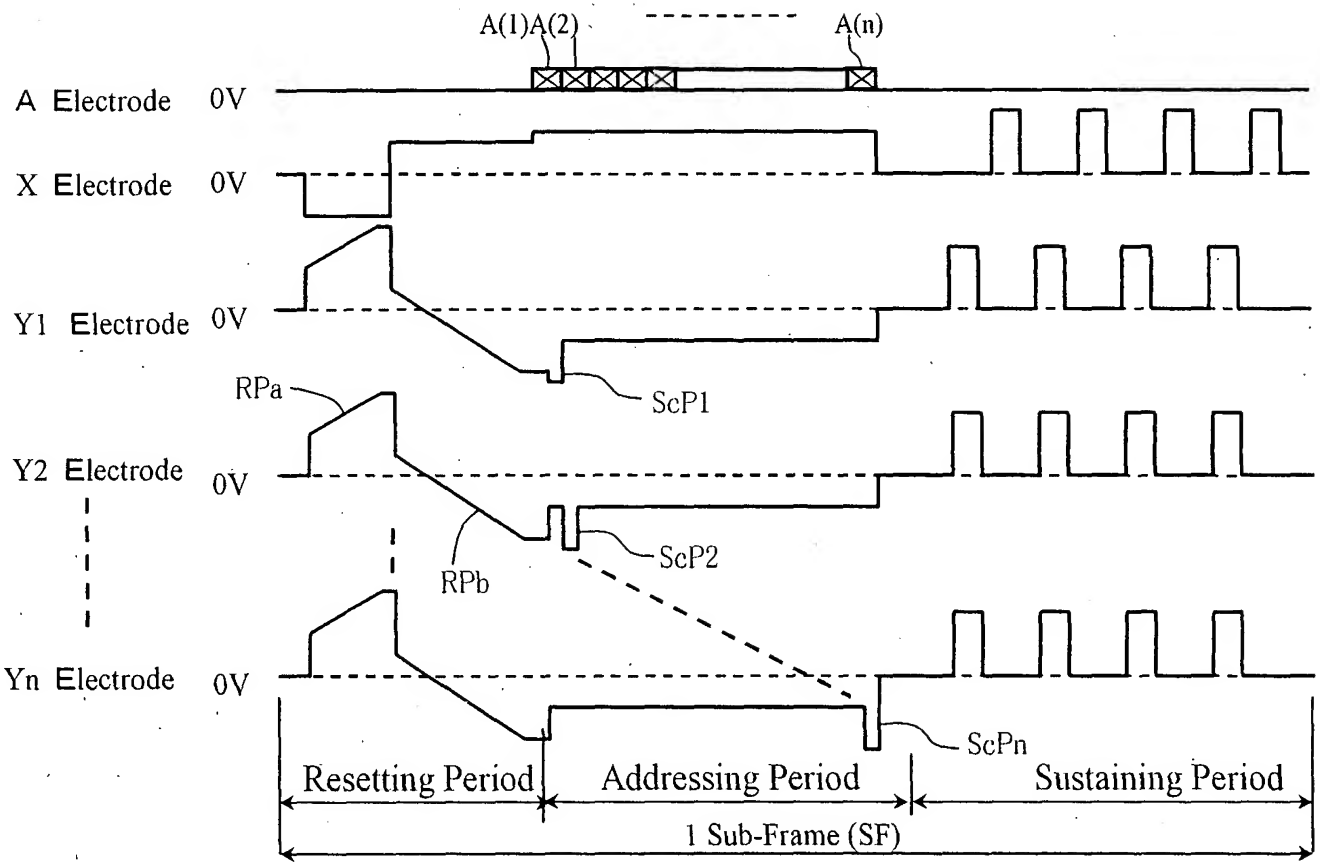

A(1)A(2)
A(n)
A Electrode
0V
X Electrode
0V
Y1 Electrode
0V
RPa
ScP1
Y2 Electrode
0V
RPb
ScP2
Yn Electrode
0V
ScPn
Resetting Period
Addressing Period
Sustaining Period
1 Sub-Frame (SF)

FIG.3

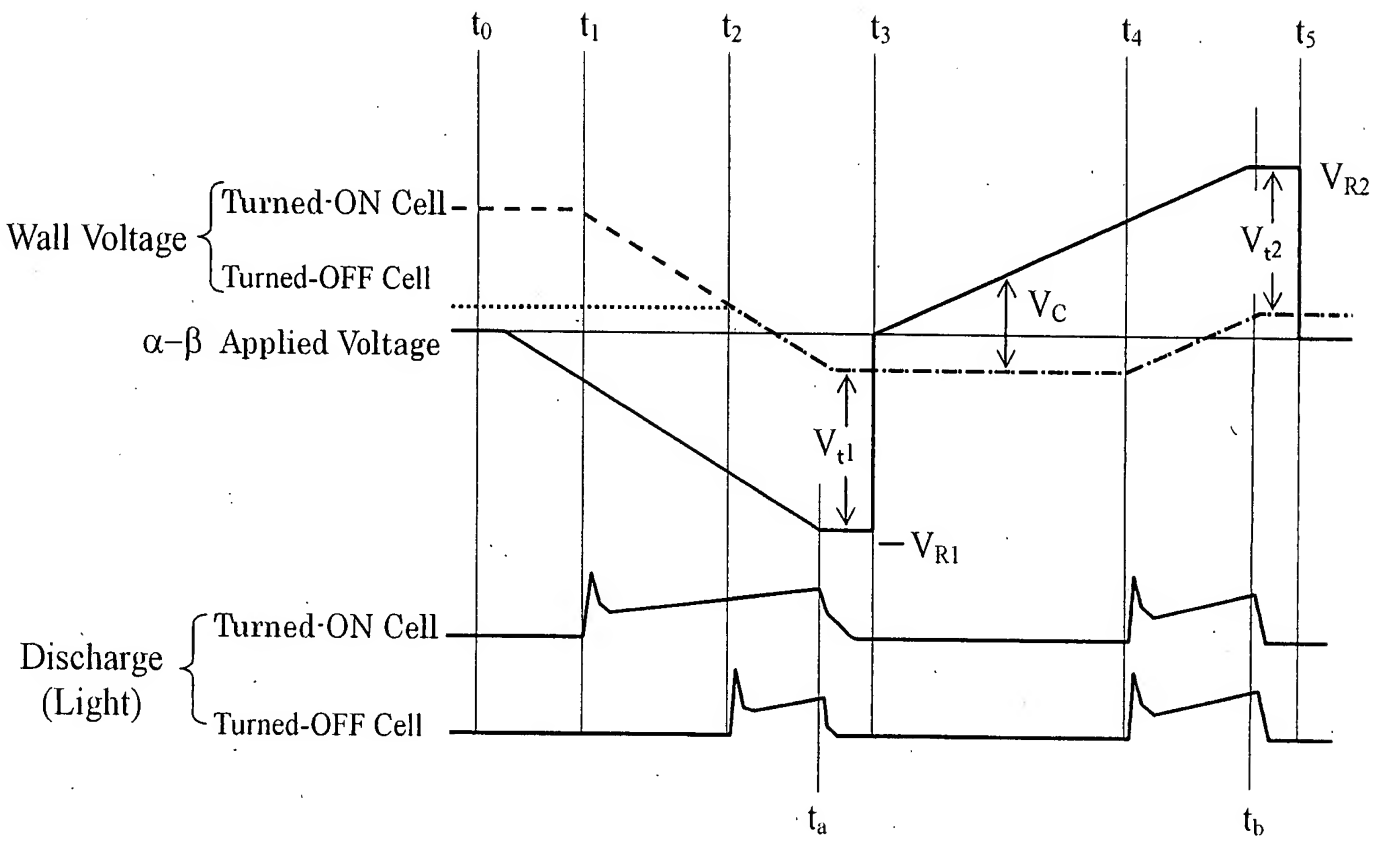

t0
t1
t2
t3
t4
t5
Wall Voltage
Turned-ON Cell
Turned-OFF Cell
α–β Applied Voltage
VR2
Vt2
VC
Vt1
VR1
Discharge (Light)
Turned-ON Cell
Turned-OFF Cell
ta
tb

FIG.4

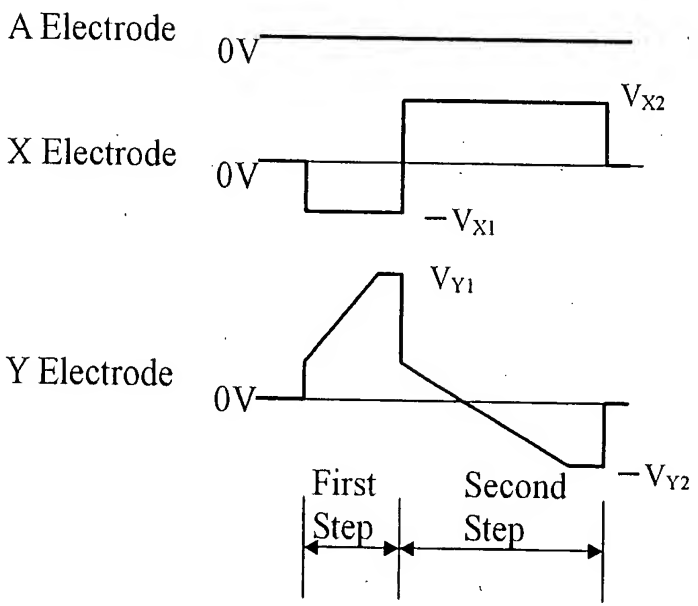

A Electrode
0V
X Electrode
0V
V_{X2}
$-V_{X1}$
Y Electrode
0V
V_{Y1}
$-V_{Y2}$
First Step
Second Step

FIG.5A

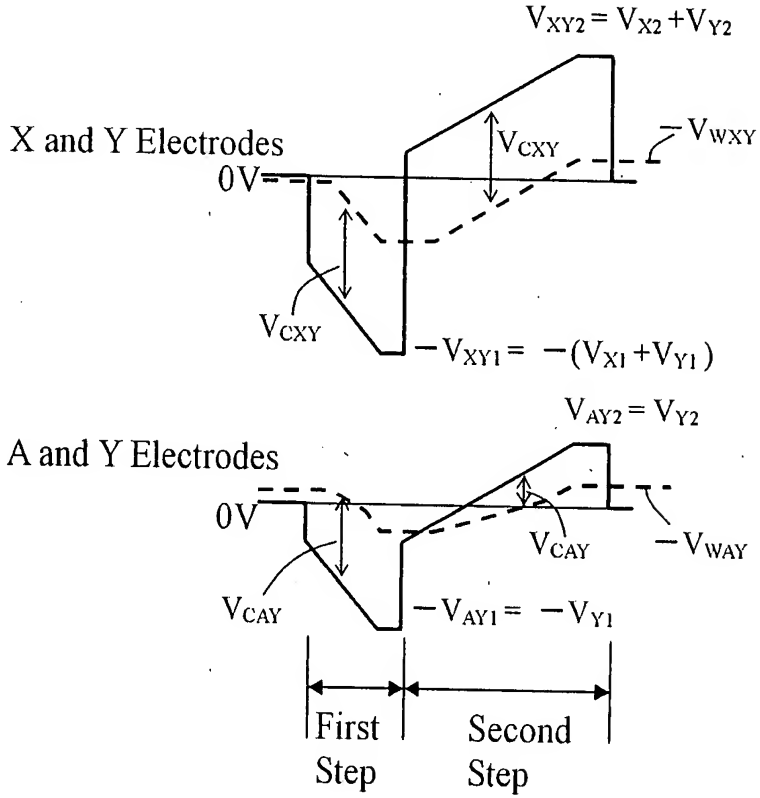

$V_{XY2} = V_{X2} + V_{Y2}$
X and Y Electrodes
0V
V_{CXY}
V_{WXY}
V_{CXY}
$-V_{XY1} = -(V_{X1} + V_{Y1})$
$V_{AY2} = V_{Y2}$
A and Y Electrodes
0V
V_{CAY}
V_{WAY}
V_{CAY}
$-V_{AY1} = -V_{Y1}$
First Step
Second Step

FIG.5B

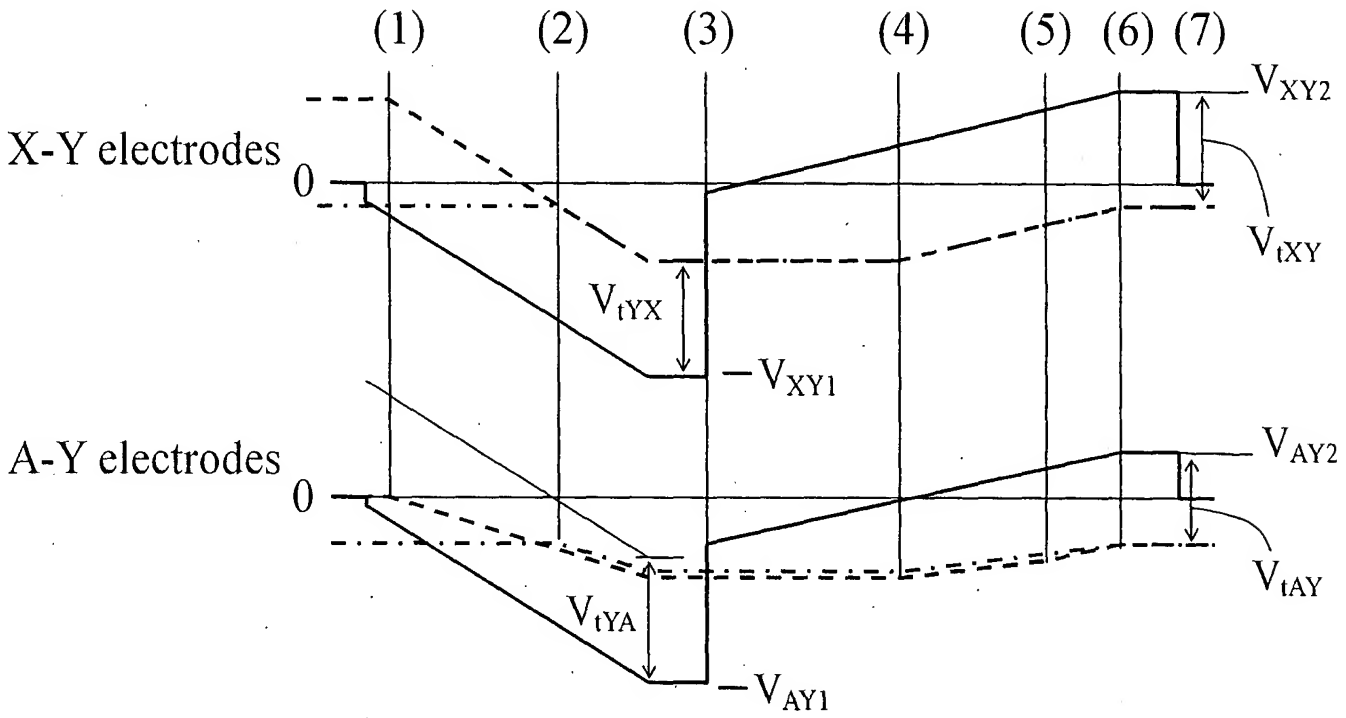

(1)
(2)
(3)
(4)
(5)
(6)
(7)
X-Y electrodes
0
A-Y electrodes
0
V_{XY2}
V_{tXY}
V_{tYX}
$-V_{XY1}$
V_{AY2}
V_{tAY}
V_{tYA}
$-V_{AY1}$
A Wall Voltage of a cell that has been turned ON in the previous SF
A Wall Voltage of a cell that has been turned OFF in the previous SF

FIG.6

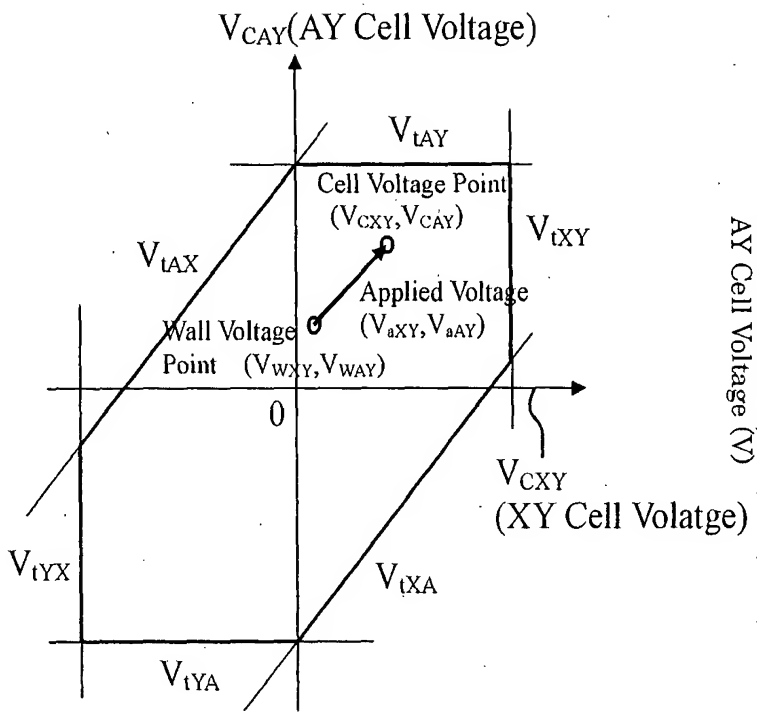

V_{CAY}(AY Cell Voltage)
V_{tAY}
Cell Voltage Point
(V_{CXY},V_{CAY})
V_{tXY}
V_{tAX}
Applied Voltage
(V_{aXY},V_{aAY})
Wall Voltage
Point (V_{WXY},V_{WAY})
0
V_{CXY}
(XY Cell Volatge)
V_{tYX}
V_{tXA}
V_{tYA}

FIG. 7A

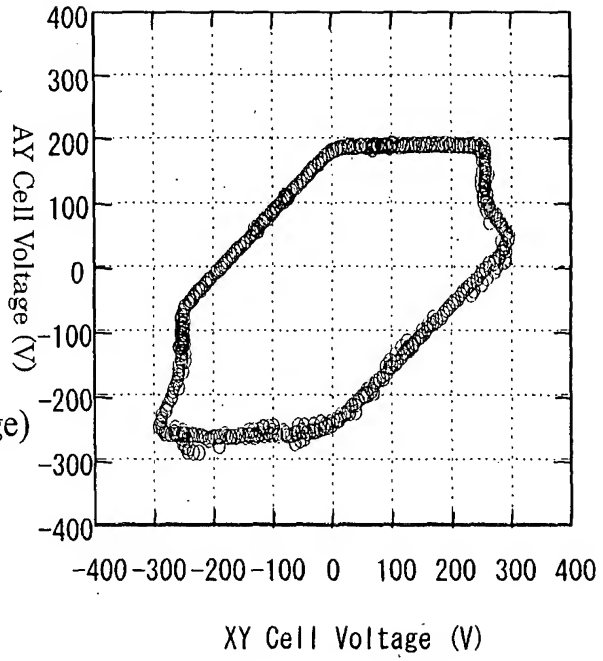

400
300
200
100
0
-100
-200
-300
-400
AY Cell Voltage (V)
-400 -300 -200 -100 0 100 200 300 400
XY Cell Voltage (V)

FIG. 7B

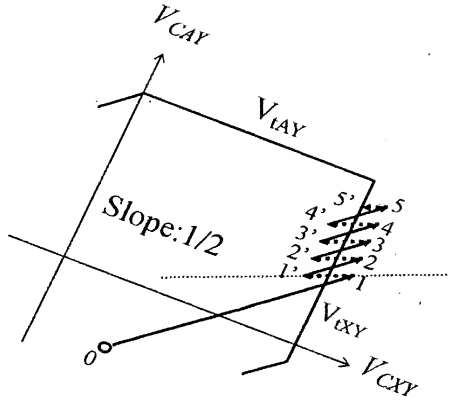

V_{CAY}
V_{tAY}
Slope:1/2
5' 4' 3' 2' 1'
5 4 3 2 1
V_{tXY}
0
V_{CXY}

FIG.8A

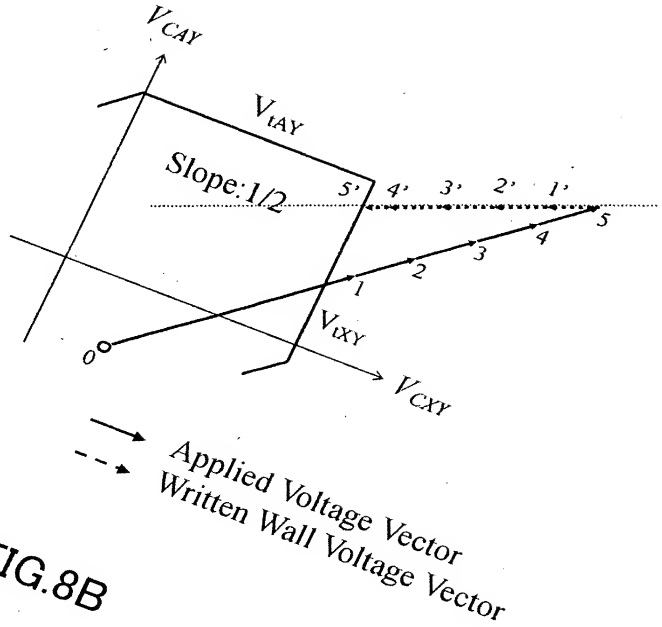

V_{CAY}
V_{tAY}
Slope:1/2
5' 4' 3' 2' 1'
1 2 3 4 5
V_{tXY}
0
V_{CXY}
Applied Voltage Vector
Written Wall Voltage Vector

FIG.8B

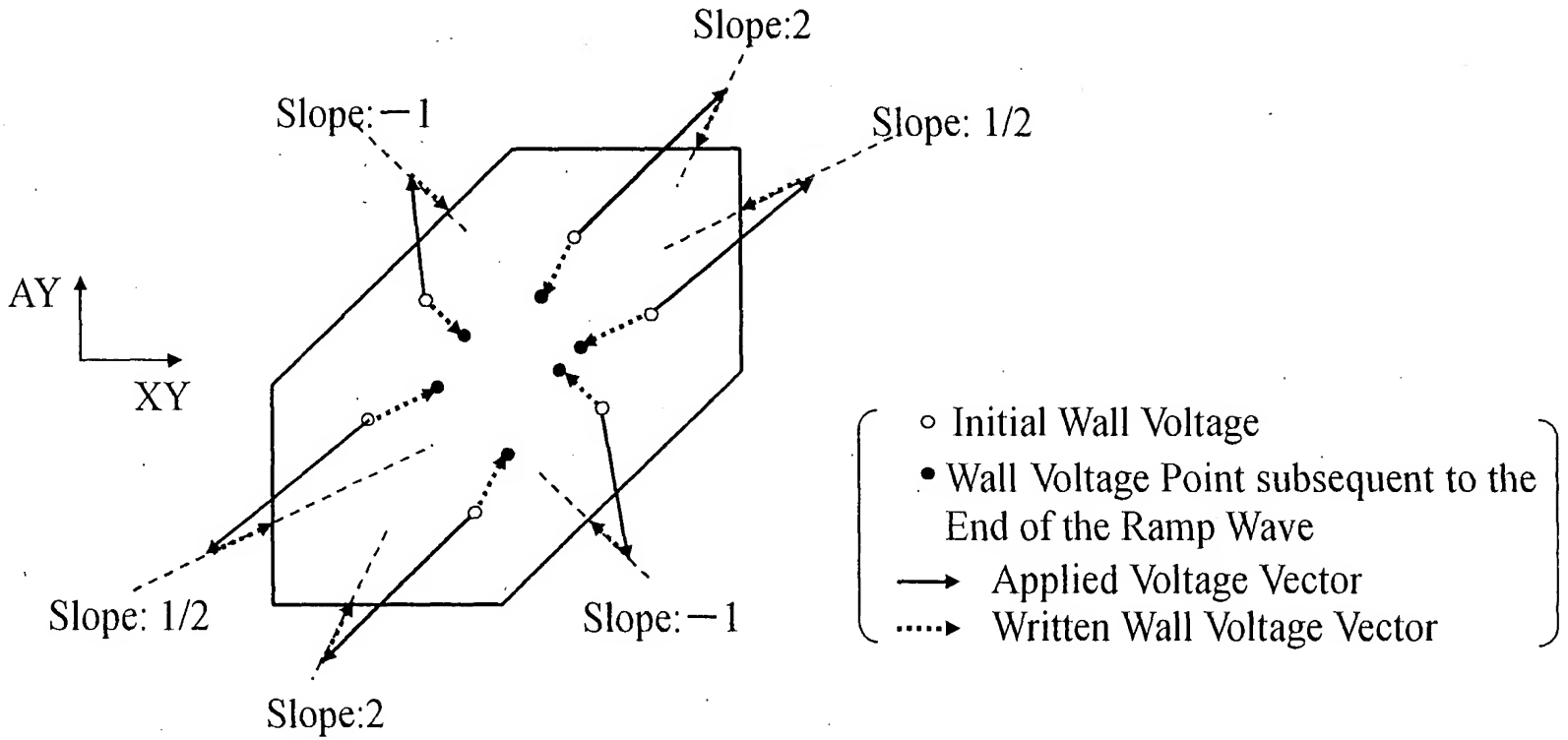

Slope:2
Slope: −1
Slope: 1/2
AY
XY
Slope: 1/2
Slope: −1
Slope:2
Initial Wall Voltage
Wall Voltage Point subsequent to the End of the Ramp Wave
Applied Voltage Vector
Written Wall Voltage Vector

FIG.9

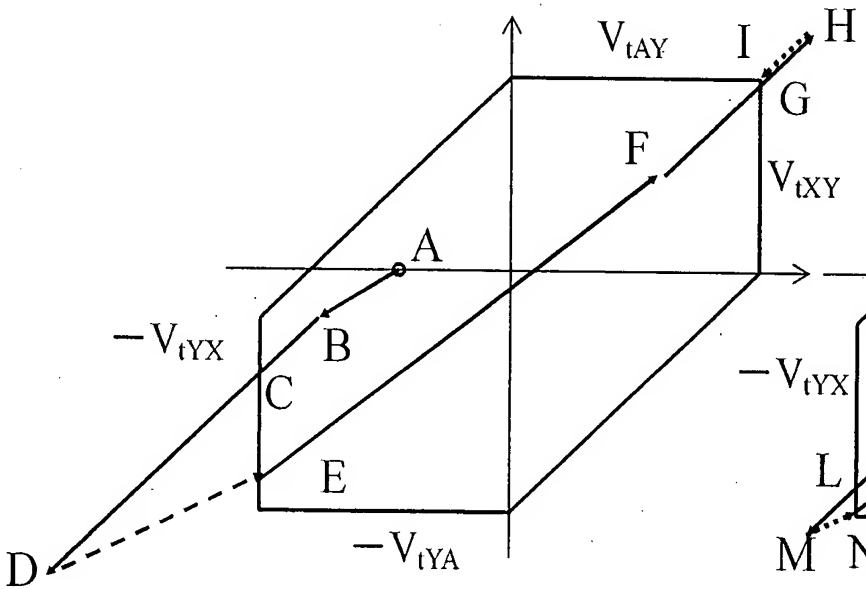


FIG.10A

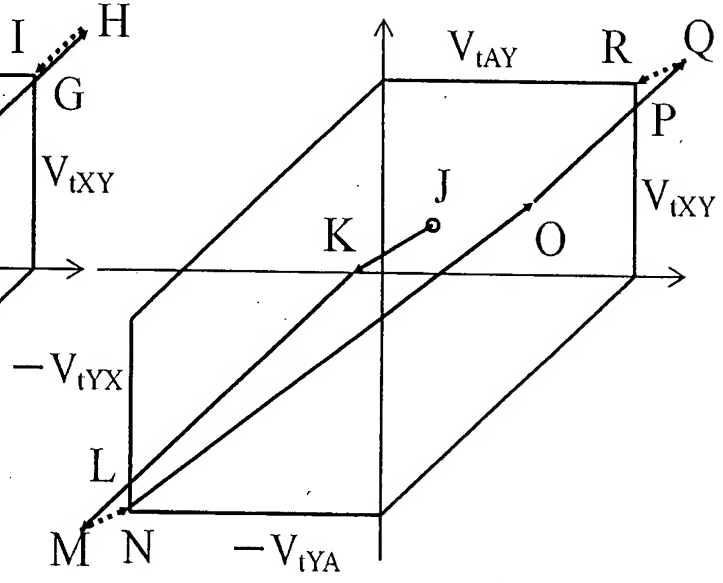


FIG.10B

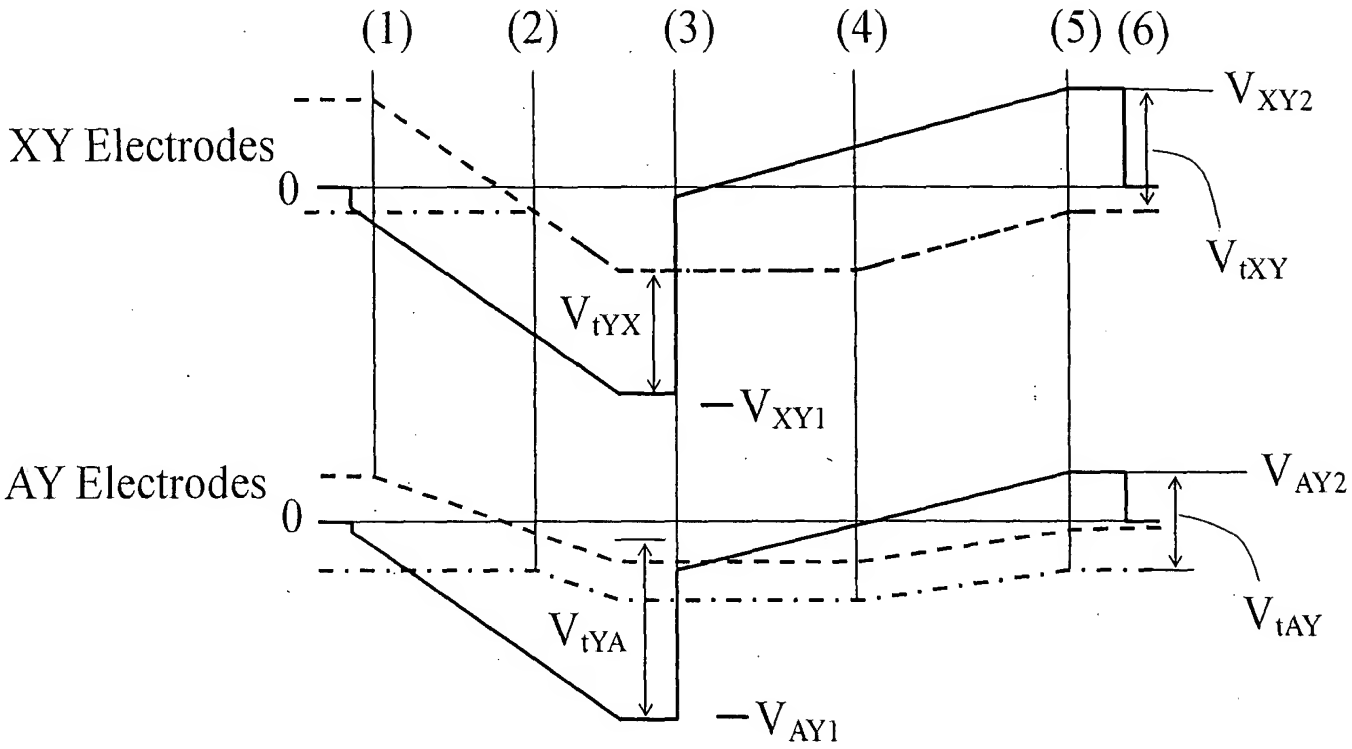

(1)
(2)
(3)
(4)
(5) (6)
XY Electrodes
0
V_{XY2}
V_{tXY}
V_{tYX}
$-V_{XY1}$
AY Electrodes
0
V_{AY2}
V_{tAY}
V_{tYA}
$-V_{AY1}$
A Wall Voltage of a cell that has been turned ON in the previous SF
A Wall Voltage of a cell that has been turned OFF in the previous SF

FIG.11

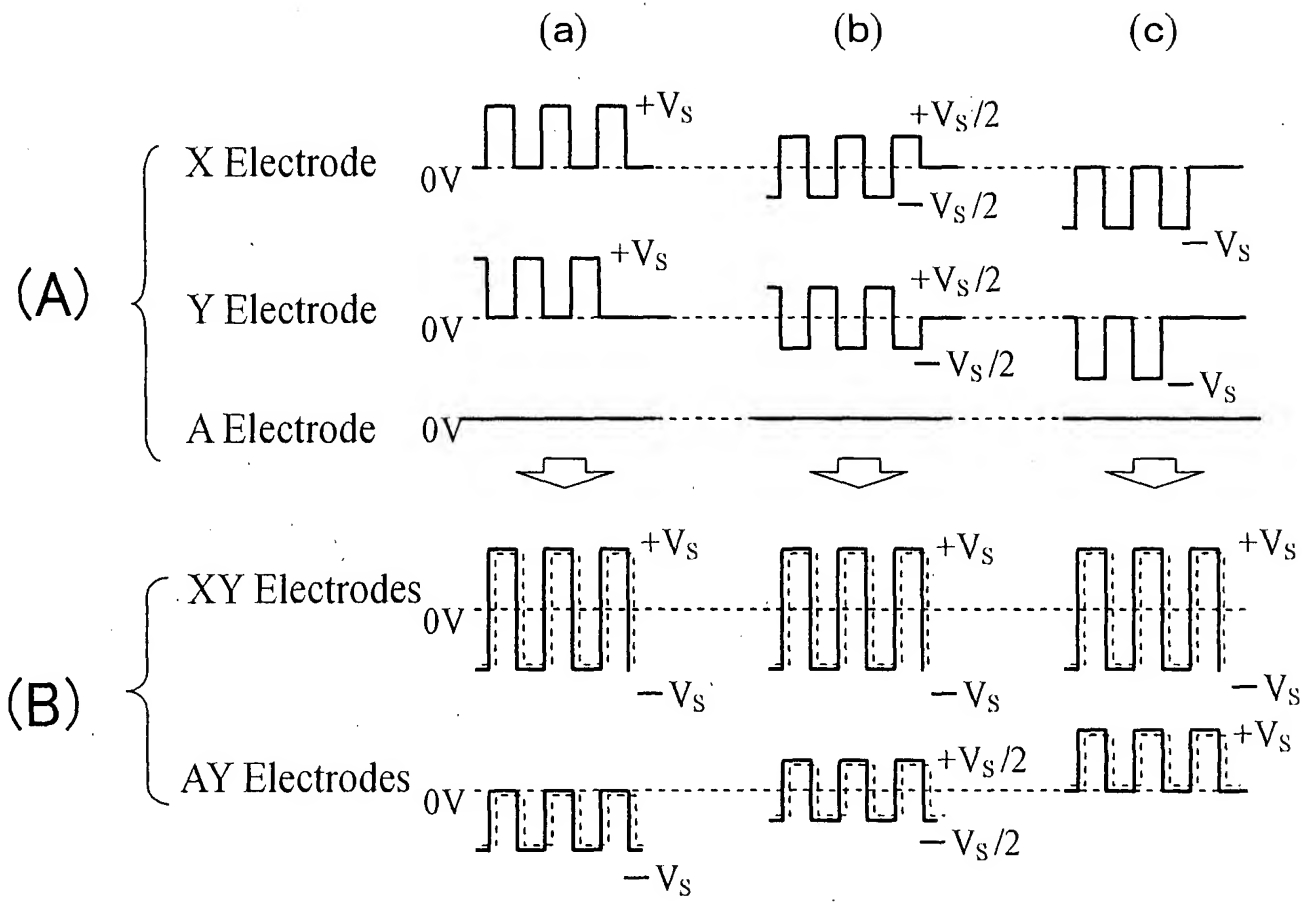

(a)
(b)
(c)
(A)
X Electrode
Y Electrode
A Electrode
0V
+Vs
−Vs
+Vs/2
−Vs/2
(B)
XY Electrodes
AY Electrodes

FIG.12

States of Wall Voltages
(Points of Turned ON Cells)

(a): (V_S,V_S), (-V_S,0)

(b): (V_S,V_S/2), (-V_S, -V_S/2)

(c): (V_S,0), (-V_S, -V_S)

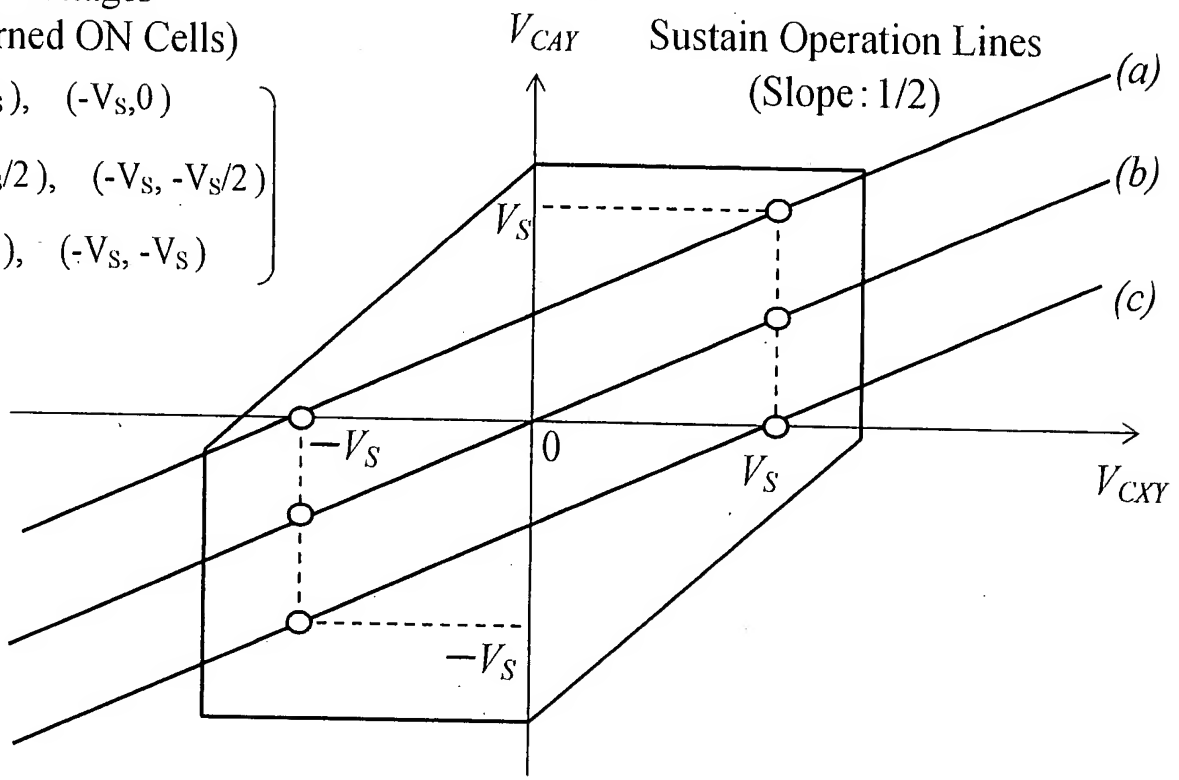


FIG.13

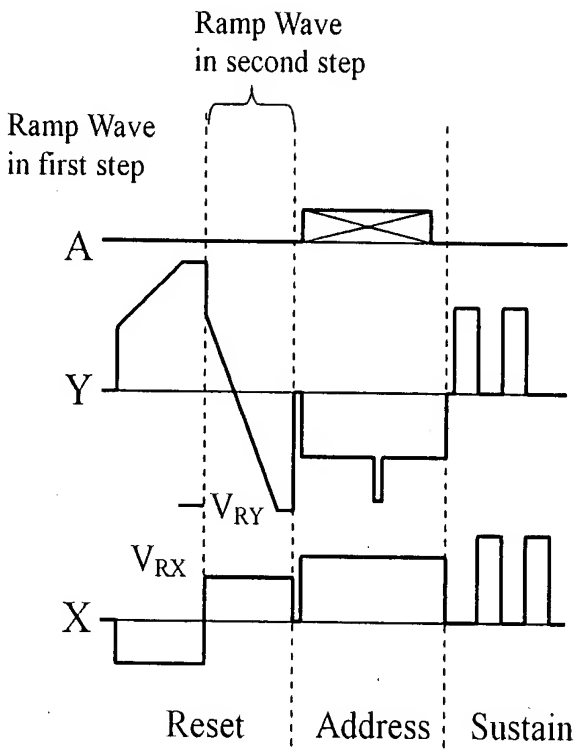
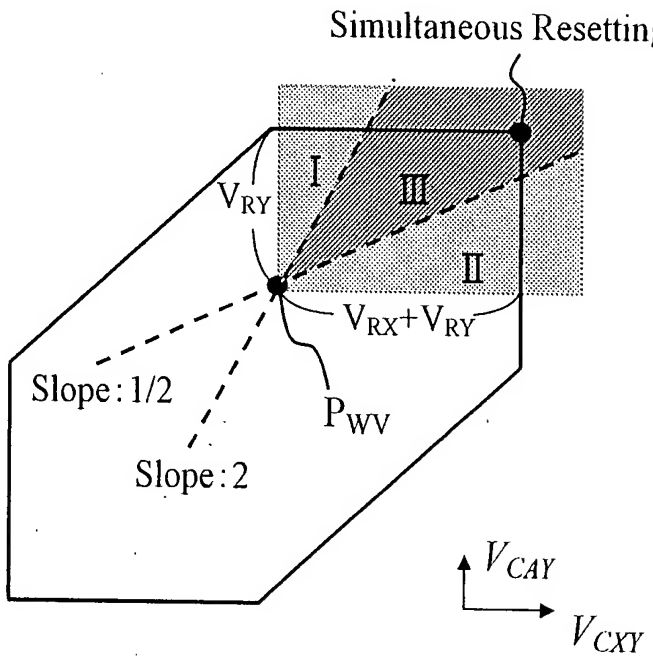


FIG.14A



P_{WV} Post-Resetting Wall Voltage Point
(Point of Wall Voltage in the Cell turned OFF)

FIG.14B

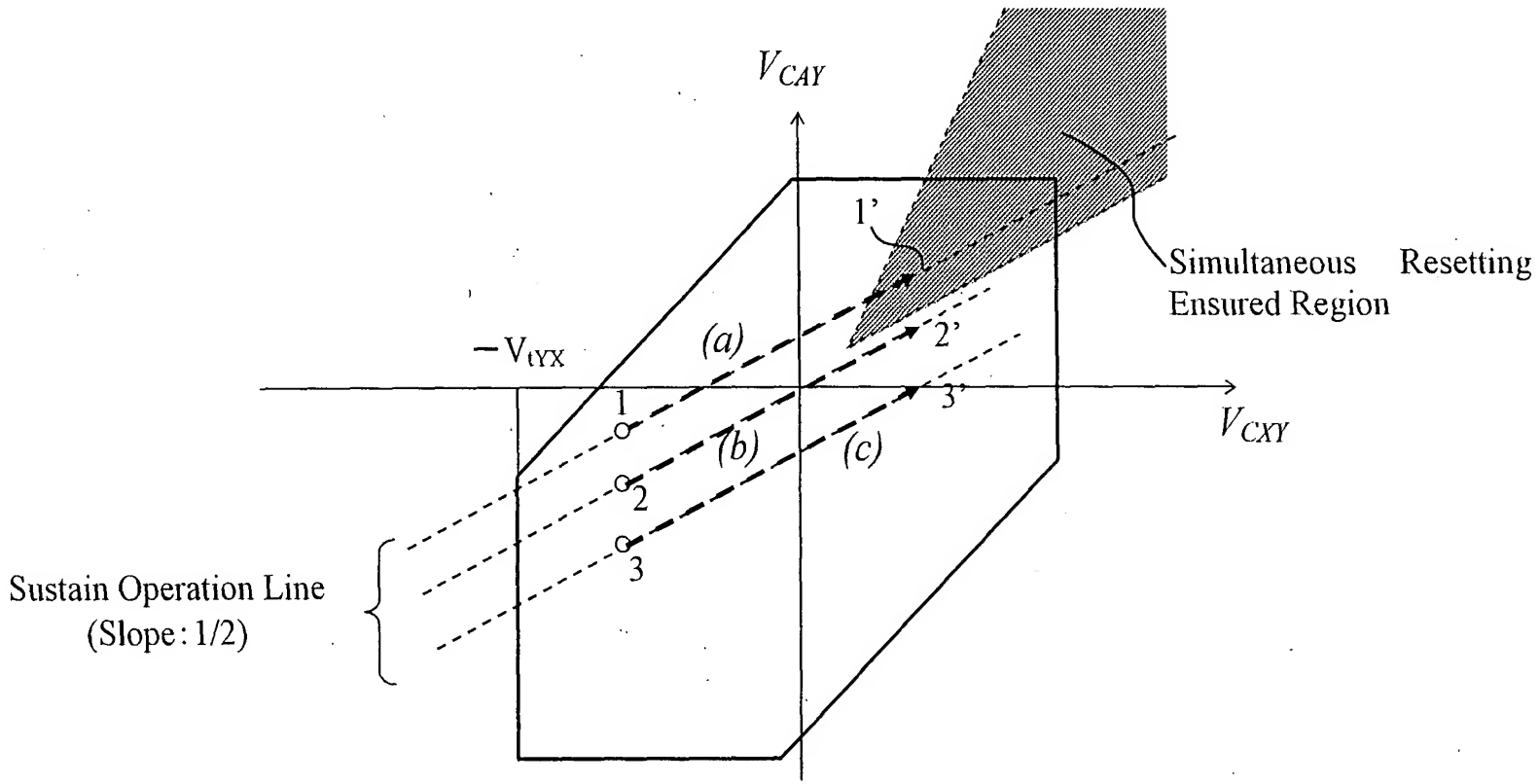
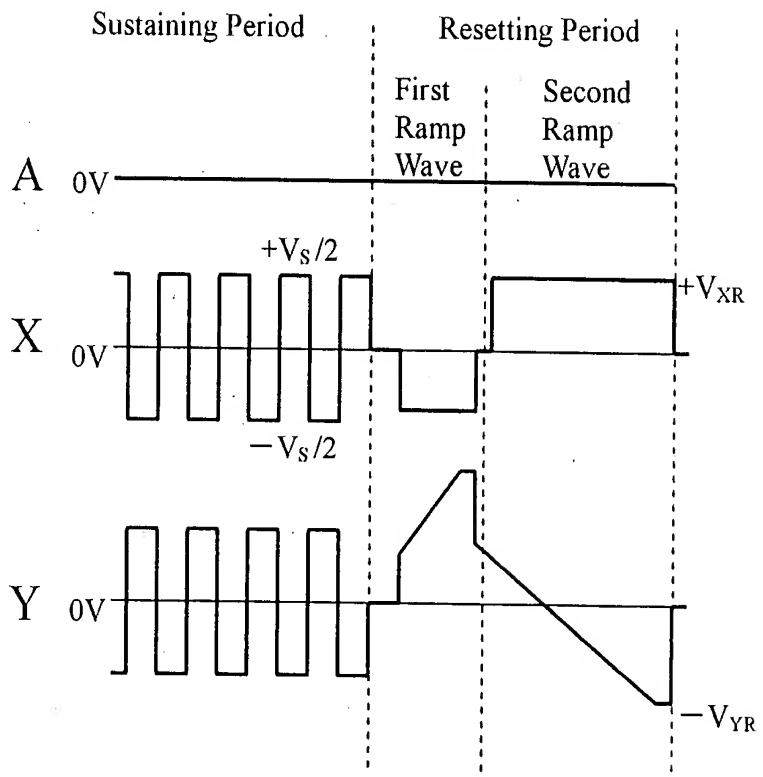
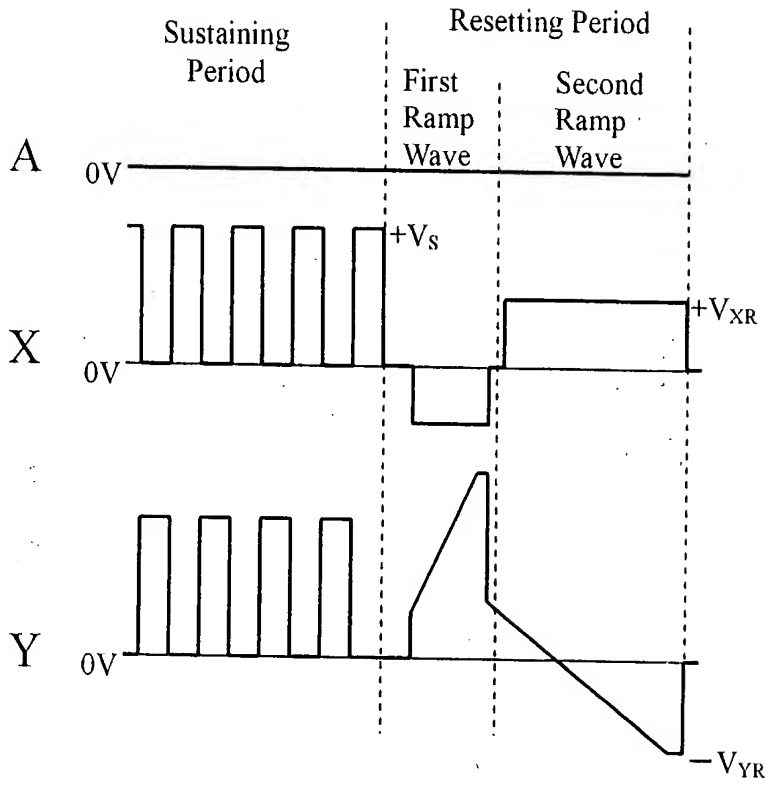

V_{CAY}
V_{CXY}
$-V_{tYX}$
1'
2'
3'
(a)
(b)
(c)
1
2
3
Simultaneous Resetting Ensured Region
Sustain Operation Line (Slope: 1/2)

FIG.15



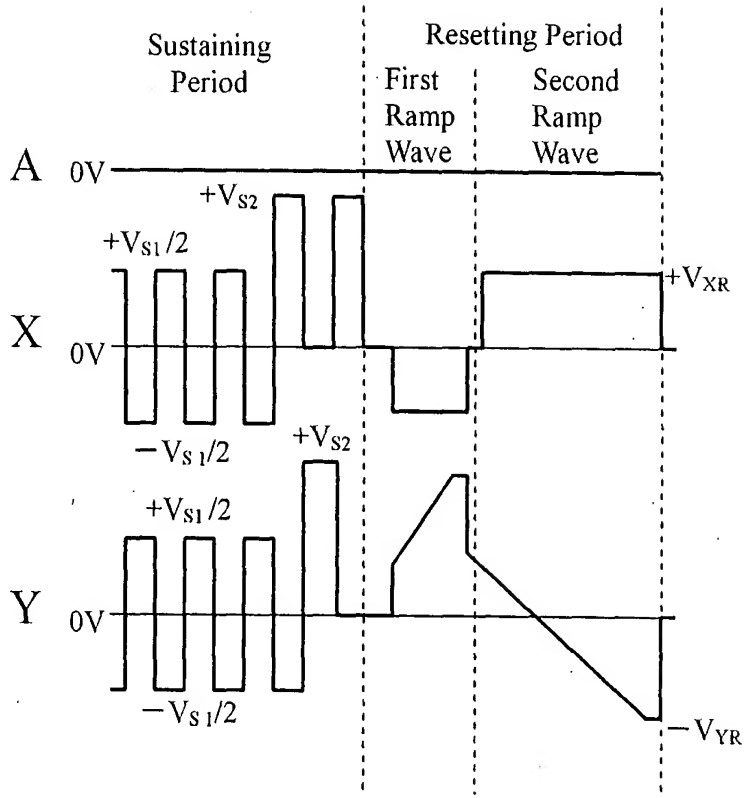
Conditional Expression: $2V_{tAY} - V_{tXY} \leqq V_{YR} - V_{XR}$

FIG.16



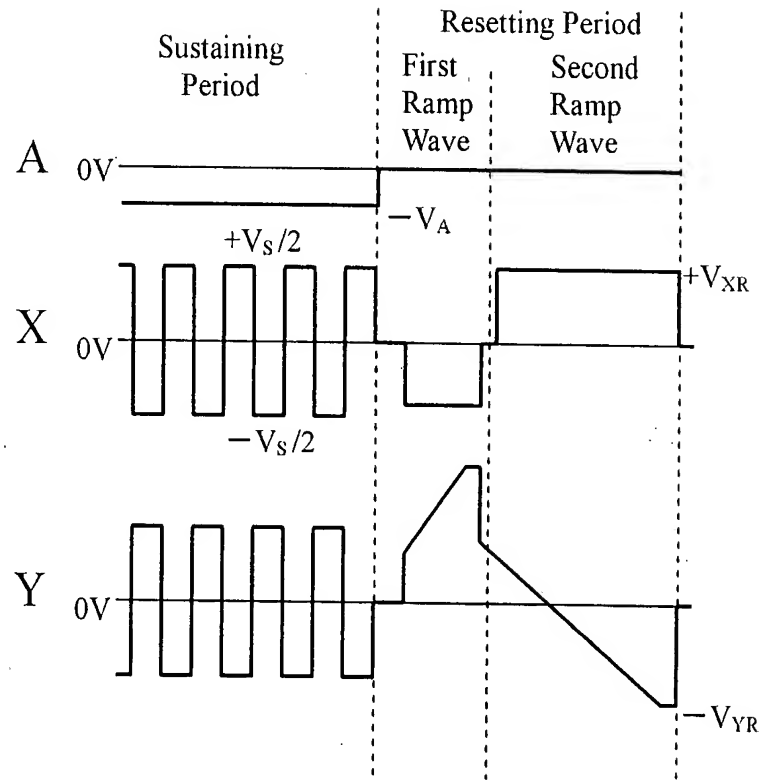
Conditional Expression: $2V_{tAY} - V_{tXY} \leqq V_{YR} - V_{XR} + V_S$

FIG.17



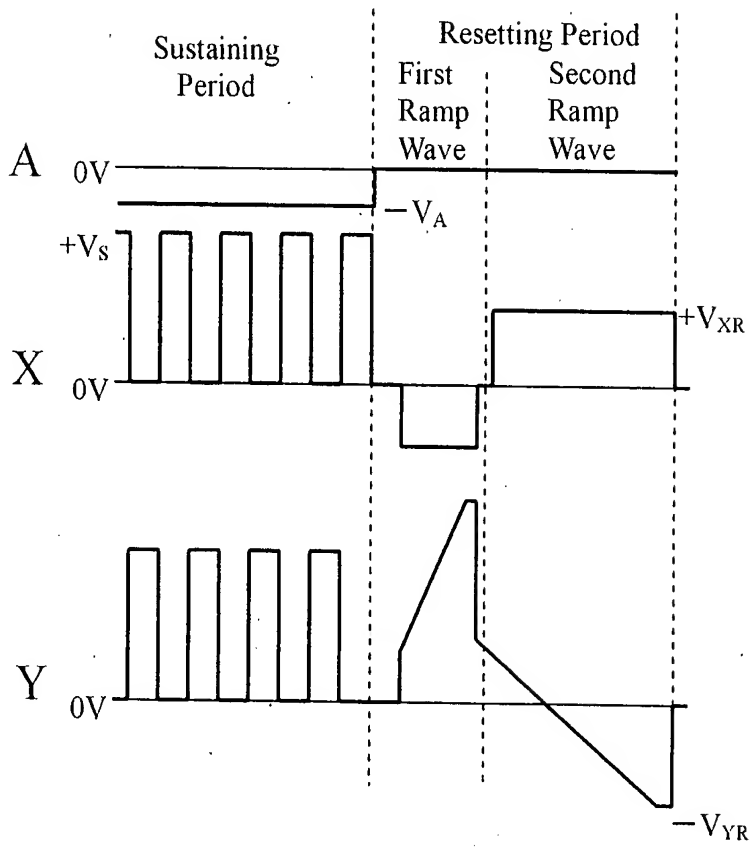
Conditional Expression: $2V_{tAY} - V_{tXY} \leqq V_{YR} - V_{XR} + V_{S2}$

FIG.18



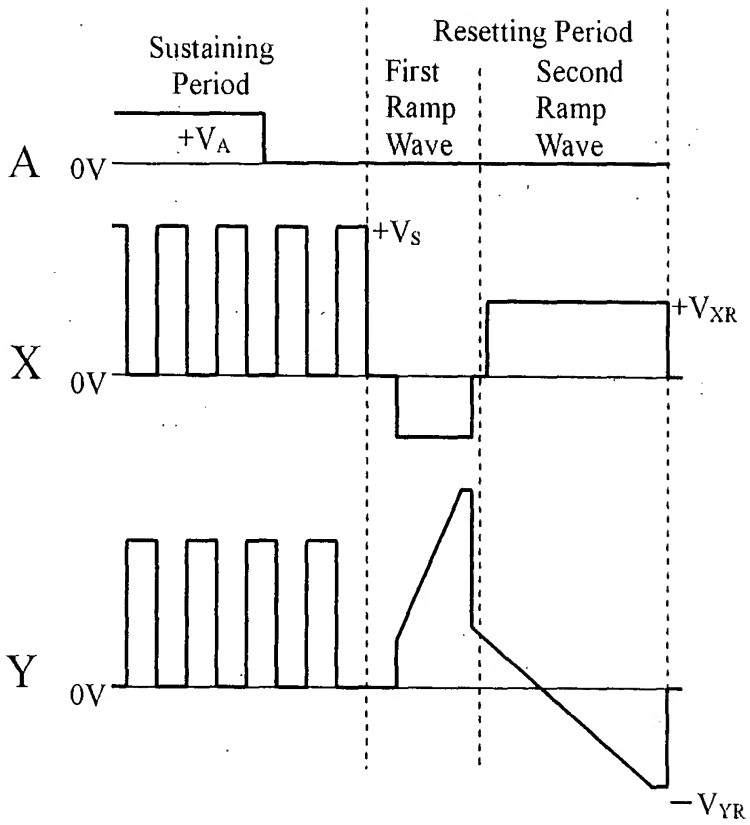
Conditional Expression: $2V_{tAY} - V_{tXY} \leqq V_{YR} - V_{XR} + 2V_A$

FIG.19



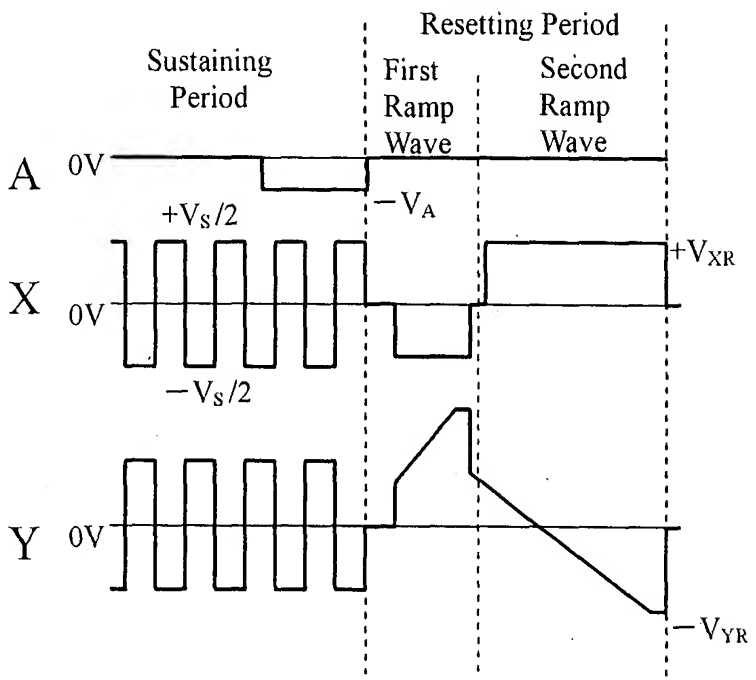
Conditional Expression: $2V_{tAY} - V_{tXY} \leqq V_{YR} - V_{XR} + V_S + 2V_A$

FIG.20



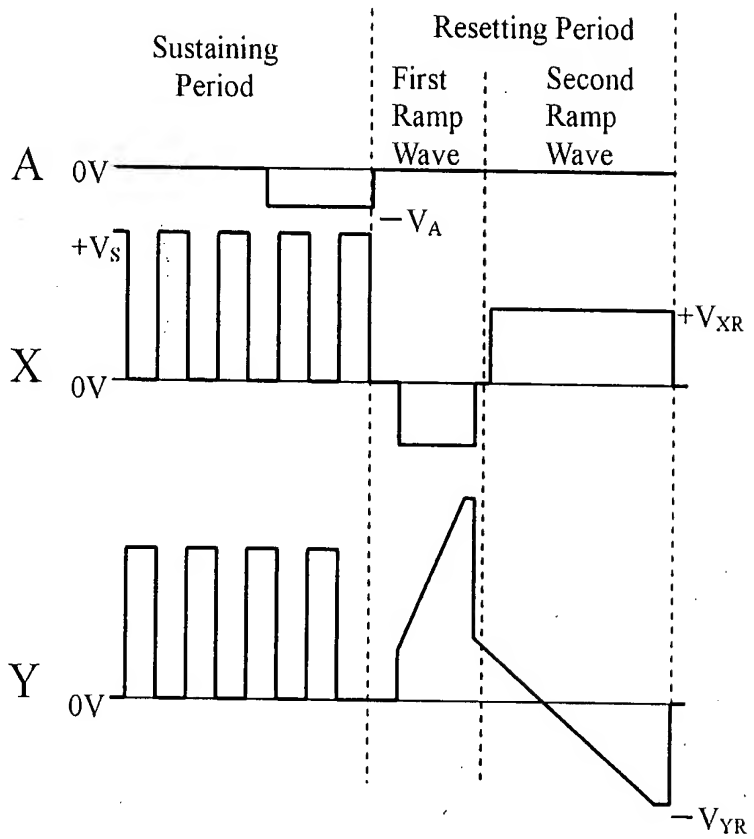
Conditional Expression: $2V_{tAY} - V_{tXY} \leqq V_{YR} - V_{XR} + V_S$

FIG.21



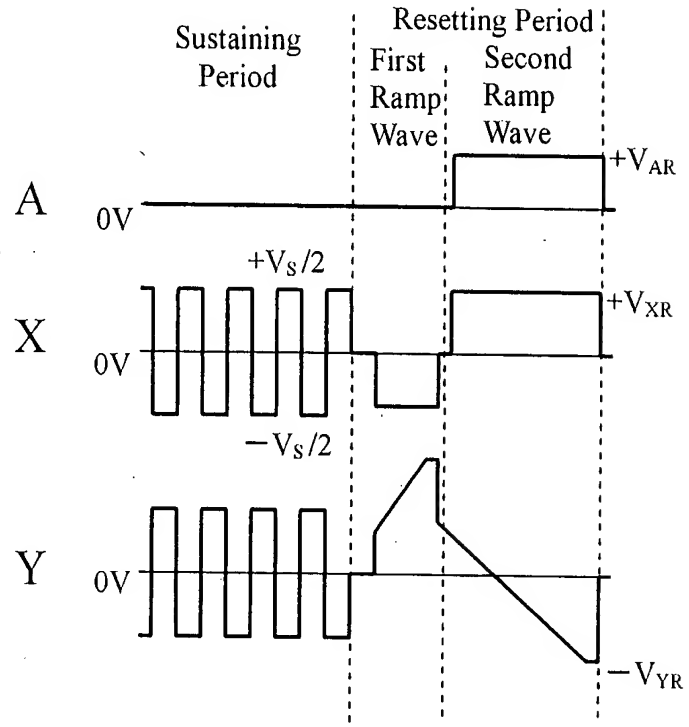
Conditional Expression: $2V_{tAY} - V_{tXY} \leqq V_{YR} - V_{XR} + 2V_A$

FIG.22



Conditional Expression: $2V_{tAY} - V_{tXY} \leqq V_{YR} - V_{XR} + V_S + 2V_A$

FIG.23



Conditional Expression: $2V_{tAY} - V_{tXY} \leqq 2V_{AR} + V_{YR} - V_{XR}$

FIG.24

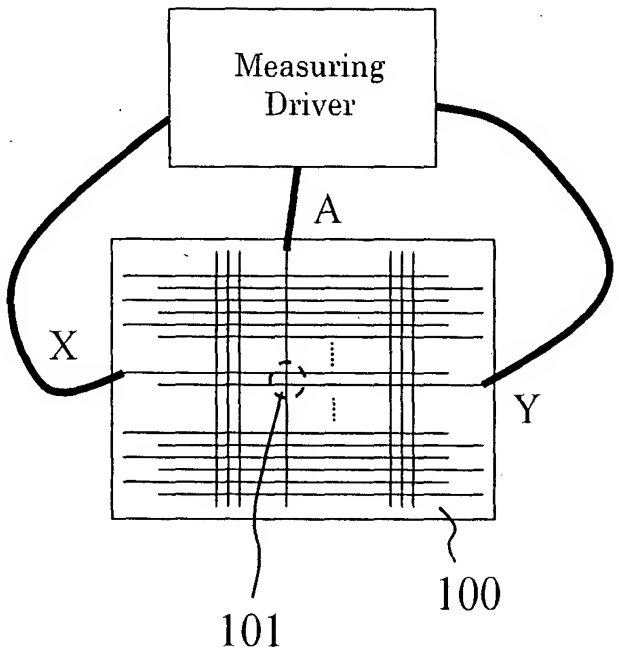


FIG.25A

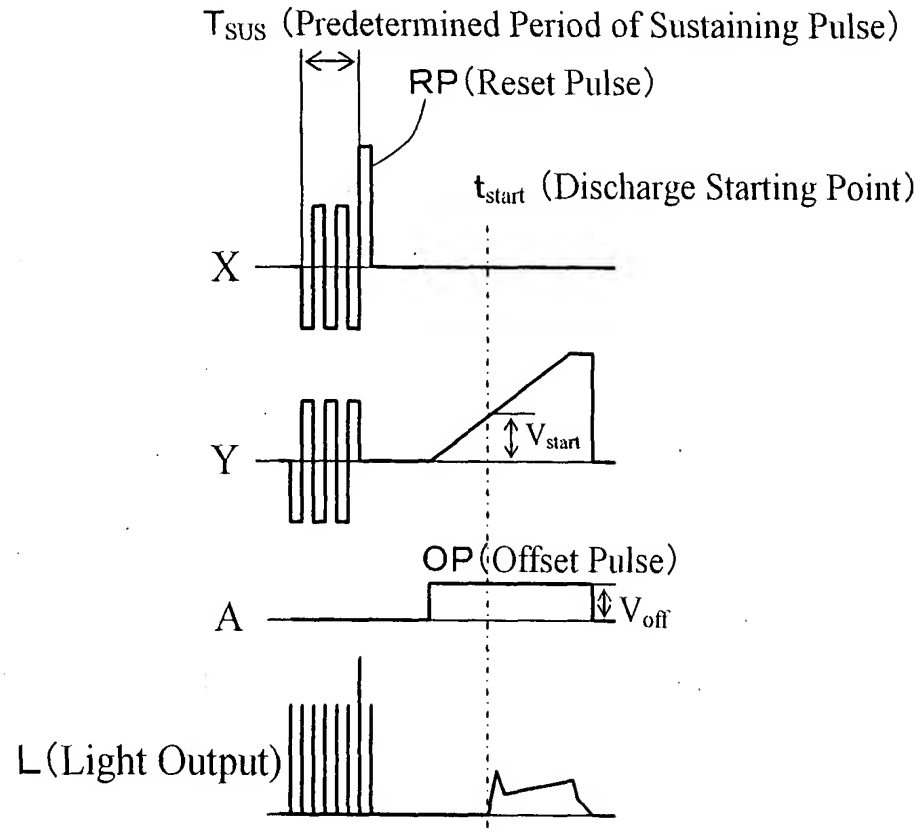


FIG.25B